

Highway 101 in Humboldt County
01-Hum-101-PM 40.9/42.2
EA 47021

**Focused Initial Study
with Mitigated Negative Declaration**



Prepared by the
State of California Department of Transportation

January 2008



For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Stephanie Coleman, North Region Environmental Planning, P.O. Box 3700, Eureka, CA 95502-3700; (707) 445-5320 Voice, or use the California Relay Service TTY number, 1-800-735-2929.

Reconstruction of Roadway near Redcrest, California

01-Hum 101 40.9-42.2
EA 47021

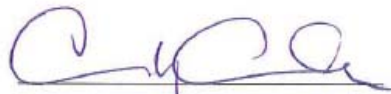
FOCUSED INITIAL STUDY with a MITIGATED Negative Declaration

Submitted Pursuant to: (State) Division 13, California Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

1-25-08

Date of Approval



Cindy Anderson, Chief

North Region Environmental Services - North
California Department of Transportation

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) is proposing a Storm Damage Permanent Restoration Project on Highway 101 near Post Mile (PM) 41.5 approximately 1.6 miles northwest of the town of Redcrest in Humboldt County. The project is necessary due to substantial damage to Highway 101 caused by 2005/2006 winter storms, resulting in the loss of two northbound traffic lanes. This project includes reconstruction of the four-lane highway, construction of a tieback retaining wall, replacing a separated culvert, installation of two headwalls, placement of erosion protection, and revegetating all disturbed areas. Roadway reconstruction will require realigning the existing roadway, stabilizing the fill slopes and reconstructing the northbound lanes. The project is anticipated to involve year-round construction, with the assistance of appropriate sediment control devices, and will be using both state and federal funding.

Determination

Caltrans has prepared an Initial Study for this project has determined from this study that the proposed Alternative 3 would not have a significant effect on the environment for the following reasons:

- Would have minimal or no effect on visual aesthetics, agricultural resources, air quality, cultural resources, geology/soils, biological resources, floodplain, land use/planning, mineral resources, noise, population/housing, hazardous materials, public services, recreation, transportation/traffic, or utilities/service systems.
- Would have a less than significant impact with the proposed mitigation for the following resource: hydrology/water quality.



Cindy Anderson
Chief, North Region Environmental Services - North
California Department of Transportation

1-25-08
Date

Table of Contents

Purpose and Need	1
Project History	1
Description of Project and Alternatives Considered	2
Permits and Approvals Needed	6
Project Location Map	7
Project Vicinity Maps	8-9
CEQA Checklist	10
Affected Environment and Impacts Alternative 1	22
Avoidance, Minimization and/or Mitigation Measures Alternative 1	23
Affected Environment and Impacts Alternative 2	24
Affected Environment and Impacts Alternative 3	24
Avoidance, Minimization and/or Mitigation Measures Alternative 3	25
Right of Way	26
Comments and Coordination	26
List of Preparers	32
Appendix 1	A-1

Initial Study

Project Title

Redcrest Storm Damage Restoration Project

Lead Agency Name, Address and Contact Person

California Department of Transportation

1656 Union St., Eureka, CA 95501

Stephanie Coleman, North Region Environmental Branch E-1

(707) 445-5320

Project Location

The project is located on Highway 101 at Post Mile (PM) 41.5, approximately 1.6 miles northwest of the town of Redcrest in Humboldt County.

Purpose and Need

The purpose of this project is to reconstruct the four-lane highway at this location. In the winter of 2005/2006 the roadway fill became saturated and began to settle causing significant roadway deformation. In addition, a culvert located at PM 41.52 separated causing further saturation of the failing roadway. To prevent the entire roadway from failing, the fill was removed (i.e. the two northbound lanes) in order to stabilize the two remaining southbound lanes. Currently, there are two lanes of traffic, one northbound and one southbound through this location. The project is necessary to repair the substantial damage to Highway 101 caused by 2005/2006 winter storms, which resulted in the loss of the two traffic lanes.

Project History

During the winter of 2005/2006, heavy storm damage caused roadway failures throughout the north coast. Between PM 40.9 and 42.2, the roadway fill material became saturated and began to settle, which caused highway 101 to shift and crack. Because of this movement the culvert at PM 41.52 separated and the flow was temporarily redirected to the culvert at PM 41.50.

Efforts have been ongoing since that time to survey, design, and permit a project to restore the roadway and drainages at this location.

Description of Project and Alternatives Considered

Alternative 1

This alternative proposes to reconstruct the four-lane highway, construct a tieback retaining wall, remove an existing separated culvert, construct a diversion channel, install a headwall at PM (PM) 41.5 and stream bank stabilization work in the channel located at PM 41.5. Roadway reconstruction will require realigning the existing roadway to its previous footprint, stabilizing the roadway and reconstructing the northbound lanes. This alternative is anticipated to involve year-round construction.

Prior to winter 2005/2006, the two outlet drainage channels merged downstream approximately 300-feet below Highway 101. This alternative would permanently join the two channels upstream from Highway 101. A similar configuration already exists on site as the result of the Emergency Storm Damage work that occurred during the winter of 2005/2006. Due to the culvert at PM 41.52 separating below the road surface during those winter storms, the water flow had to be rerouted through the culvert at PM 41.5. The emergency diversion pipe would be removed and an approximately 140-foot long, impermeable rock-lined channel (trapezoidal design 3 ft wide on the bottom and 6 ft top) will convey flow from upstream of PM 41.52 to the 48-inch diameter culvert inlet at PM 41.5.

The impermeable rock-lined channel would be necessary to prevent additional saturation of the hillside. End dumping of rock is proposed to occur only on the roadbed and outside of suitable habitat for the marbled murrelet (MAMU) and northern spotted owl (NSO). Any rock used would be placed carefully and delivered as one pile per truckload. The 48-inch diameter culvert at PM 41.5 would then carry the combined 100-year flows of both drainages. The outlet channel at PM 41.52 would continue to receive flow from the cross drain outlet that carries water from the underdrain on the north side of the roadway.

Alternative 2

No build. The no build alternative does not meet the purpose and need of restoring Highway 101 to its previous condition of two traffic lanes in each direction and does not resolve the existing detoured curve alignment, which does not meet current safety standards.

Alternative 3

This alternative proposes to stabilize and reconstruct the roadway to its previous condition by constructing a tieback retaining wall. The proposed wall would be placed 8-feet from the new edge of pavement, below the northbound lanes, at a length of approximately 400-feet (see project layout-page 3).

There are two jurisdictional drainages within the project area that pass through culverts; one located at PM 41.50 and the other at PM 41.52. New headwalls are proposed at each of the inlets, and the existing separated drainage at PM 41.52 would be re-established through the roadway and wall. Approximately 170 feet of the channel at the outlet, which was originally in a culvert, would be day-lighted when the wall is constructed and a new lined, impermeable channel is proposed to the end of the existing current outlet.

When the culvert at PM 41.52 is repaired and both channels are re-established, the temporary diversion that was placed during the emergency project would be redirected to the new culvert.

To enhance and restore the existing drainages and adjacent wetlands, and to remediate existing scour within the channel at PM 41.50, bioengineering work is proposed, pending discussions and recommendations from the resource agencies.

Please note that this alternative was added to the alternatives analysis based on the modification of the design of the tieback retaining wall. The modification allows for the future earth movements downhill of the wall that would not affect the wall or the culvert at this location.

There will be a correction to the drainage gallery that was installed during work, which includes taking off approximately 6-inches to 1-foot of rock and replacing it with soil for better drainage.

The project will most likely start with replacing the existing, separated 42-inch diameter culvert located at PM 41.52. Excavation of the culvert under the existing live traffic lanes will require the use of sheet piles for shoring. The sheet piles will be vibrated into position and removed similarly at the conclusion of an approximately two-day operation. The total length of 42-inch diameter culvert pipe to be replaced is approximately 115-feet.

The tieback wall would be the next order of work and consists of installation of a series of “H-piles” placed in a 36-inch diameter drilled hole which is backfilled with concrete (also known as soldier piles) spaced roughly six feet on-center for an approximate total length of 400-feet. The structure would be placed 8-feet from the edge of pavement on the east side of the proposed northbound lanes and have approximately 10-feet of exposed lagging with a 15-foot wide bench at the base of the exposed lagging. The proposed soldier piles would be approximately 80-feet in length with 130-foot long tieback anchors. The proposed wall would effectively stabilize the highway at this location.

Work on the drainage system (PM 41.50) would occur during construction of the tieback wall. Approximately 14.5-feet of the 48-inch diameter pipe at the culvert inlet would be replaced and a new concrete headwall installed. Concrete washout facilities would likely be located at a station on-site (outside of state and federal regulated waters), at the proposed stockpile location at PM 42.5. Equipment access to construct the inlet channel and headwall for the culvert at PM 41.50 would be obtained via removal of existing guardrail, temporarily relocating some Rock Slope Protection, and construction of a temporary access road approximately 350-feet in length.

Existing scour in the channel at PM 41.5 is in part due to water velocities from the temporary water diversion from the channel at PM 41.52. Stream bank stabilization is proposed at four specific locations approximately 30-feet, 60-feet, 90-feet and 165-feet downstream of the culvert outlet, in order to decrease the potential for continued erosion and sediment entering the drainage network, and to mitigate for scour impacts during the temporary diversion. Bioengineering restoration work is proposed for the channel at PM 41.50, pending discussions and recommendations from the jurisdictional resource agencies. Willow waddles, brush layering, and/or other appropriate bioengineering techniques would be used to stabilize the scour sections and effectively minimize the release of sediments. In order to access the channel at PM 41.50 for restoration, it is proposed to use hand labor as well as an existing road that allows for access to the two upstream locations.

Local and native willows, alders, and other riparian vegetation will be planted with a total of approximately 800 cuttings and/or saplings placed around the project site. The vegetation will likely be comprised of 85% willows, 10% alders, and 5% maples. The alders and maples shall be planted as saplings and container stock, not as cuttings. Local willow cuttings will be incorporated along the channel where feasible. All disturbed soil areas (DSA's) will be revegetated and/or hydro seeded (as recommended by the Caltrans revegetation specialist prior to the end of construction). Adequate BMP's for sediment

and turbidity control shall be implemented as described in the Water Pollution Control document in order to prevent unauthorized discharges of silt or sediment to surface waters throughout construction.

All drainage work is estimated to take approximately six weeks to construct and will be completed during the period of May 15 – October 15 annually. Work within suitable MAMU/ NSO habitat will be completed consistent with the informal Endangered Species Act consultation with the United States Fish and Wildlife Service (USFWS). A portion of the drainage work will likely require the use of a backhoe, excavator, hauling and dump trucks, concrete trucks, portable generator, boom truck, vibratory hammer, and pump.

Finally, fill will be placed and compacted to form a bench below the retaining wall and the new roadway will be paved. Paving and regrading the roadway will require two stages where northbound lanes would be paved under the current striping/delineated roadway, and southbound lanes would be paved under a second stage where traffic would be diverted to the newly paved northbound lanes. The equipment necessary to complete the roadway construction is anticipated to include a grader, compactor, boom truck, portable generator, vibratory roller, paver, saw, and grinder.

The total estimated time to construct this project is 13 months or 265 working days. Staging areas are proposed to be located on the roadway shoulders at PM 42.5 and at PM 38.0 along Highway 101.

Other alternatives considered:

- ❑ Rock Buttress – this alternative would have had a larger impact on the surrounding area, would have encroached on State Park property and would have created a large aesthetic impact and involve the cutting of several large trees. This would have been the lowest in cost.
- ❑ Viaduct/bridge – this alternative would have taken the longest time to build (design and construction), would require a median barrier to be built, cost the most of all the alternatives and would also have an aesthetic impact to the area.

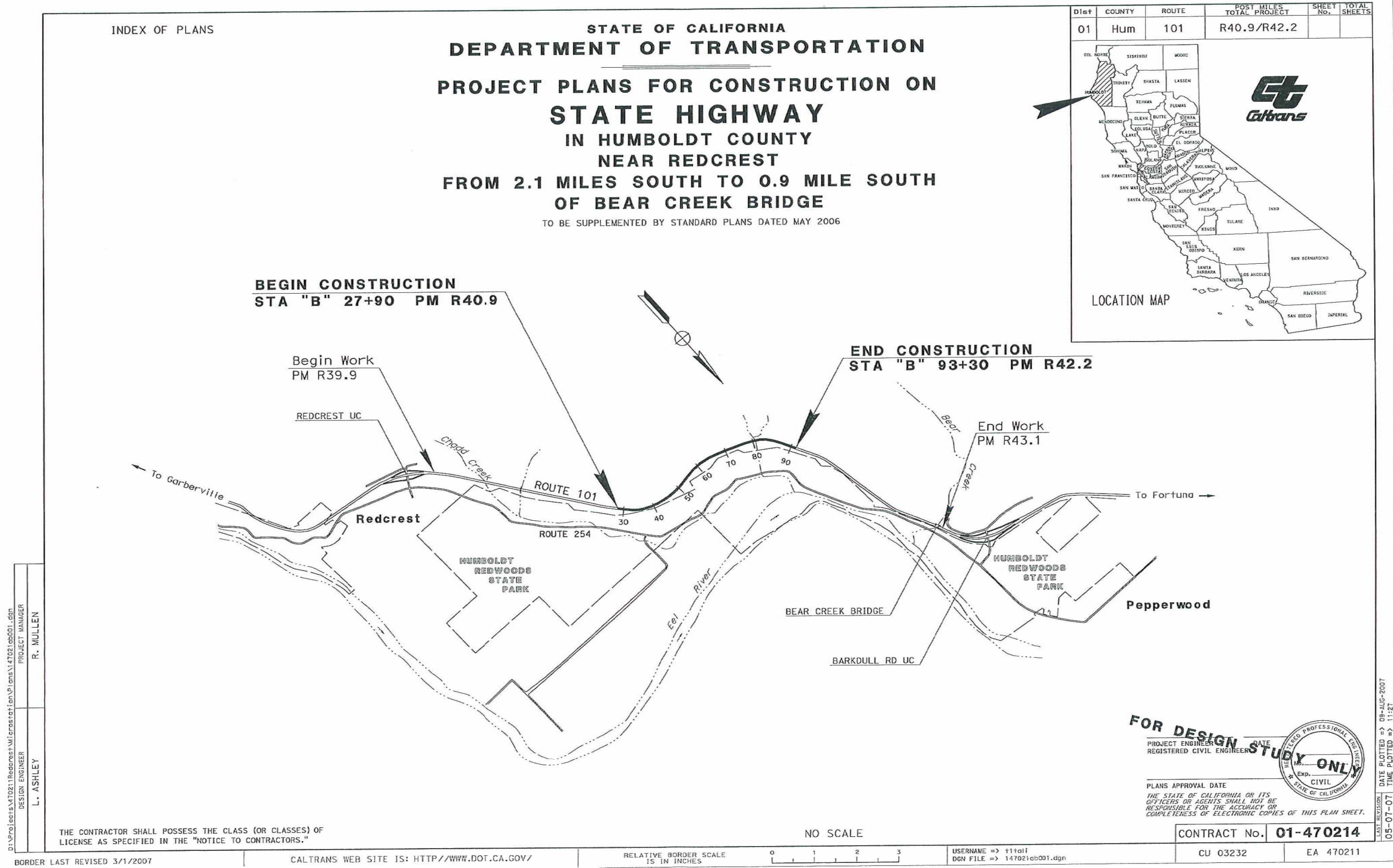
Surrounding Land Uses and Setting

The project site is on the state highway system between PM 40.9/42.2 on Highway 101. It is bordered by Humboldt Redwoods State Park to the east and timberlands to the west.

Permits and Approvals Needed

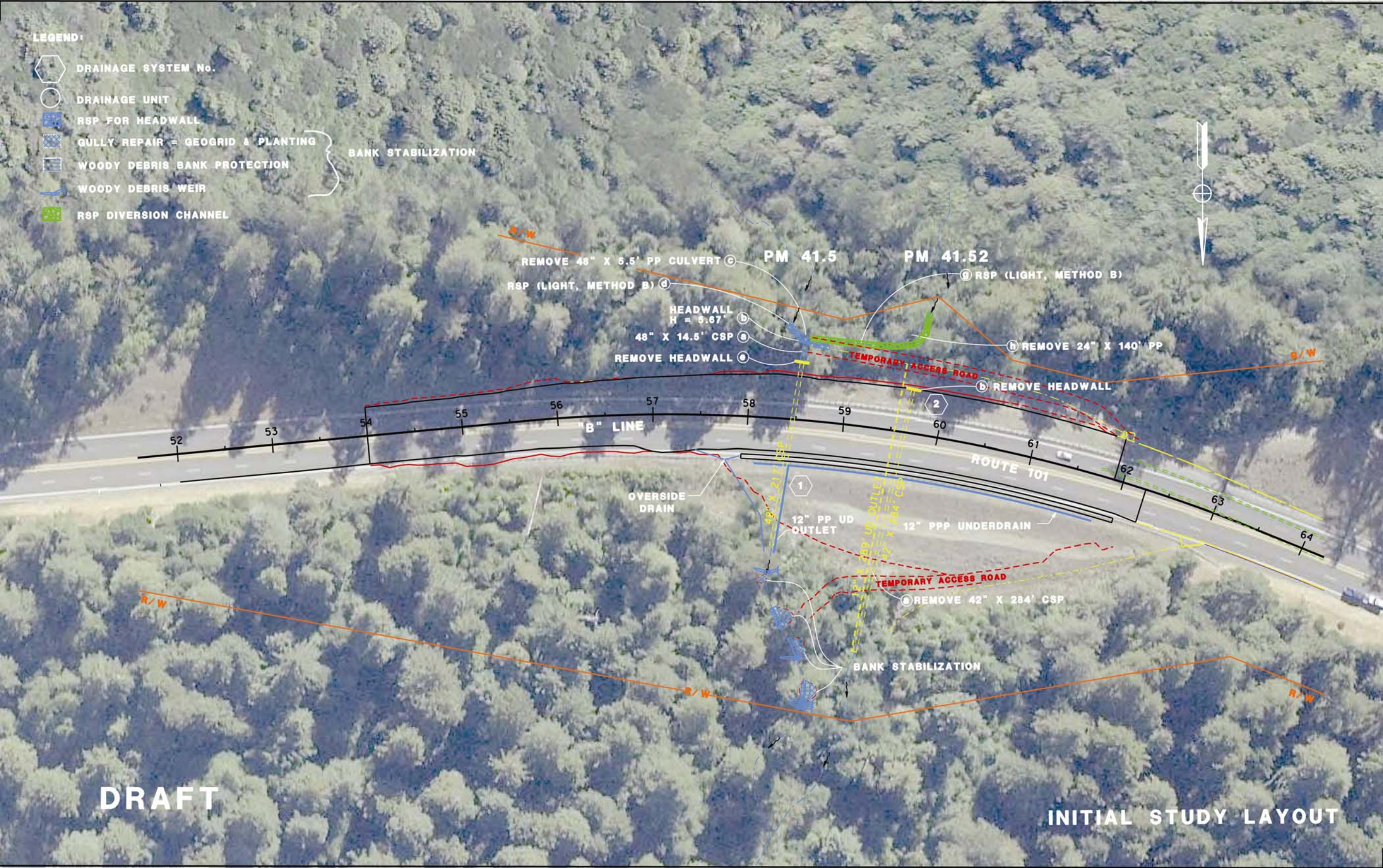
- ❑ Section 7 Endangered Species Act Consultation with U.S. Fish and Wildlife Service – Completed December 15, 2006
- ❑ 401 Water Quality Certification – North Coast Regional Water Quality Control Board
- ❑ California Department of Fish and Game Section 1602 Permit
- ❑ U.S. Army Corps of Engineers Section 404 Nationwide Permit

Project Location Map



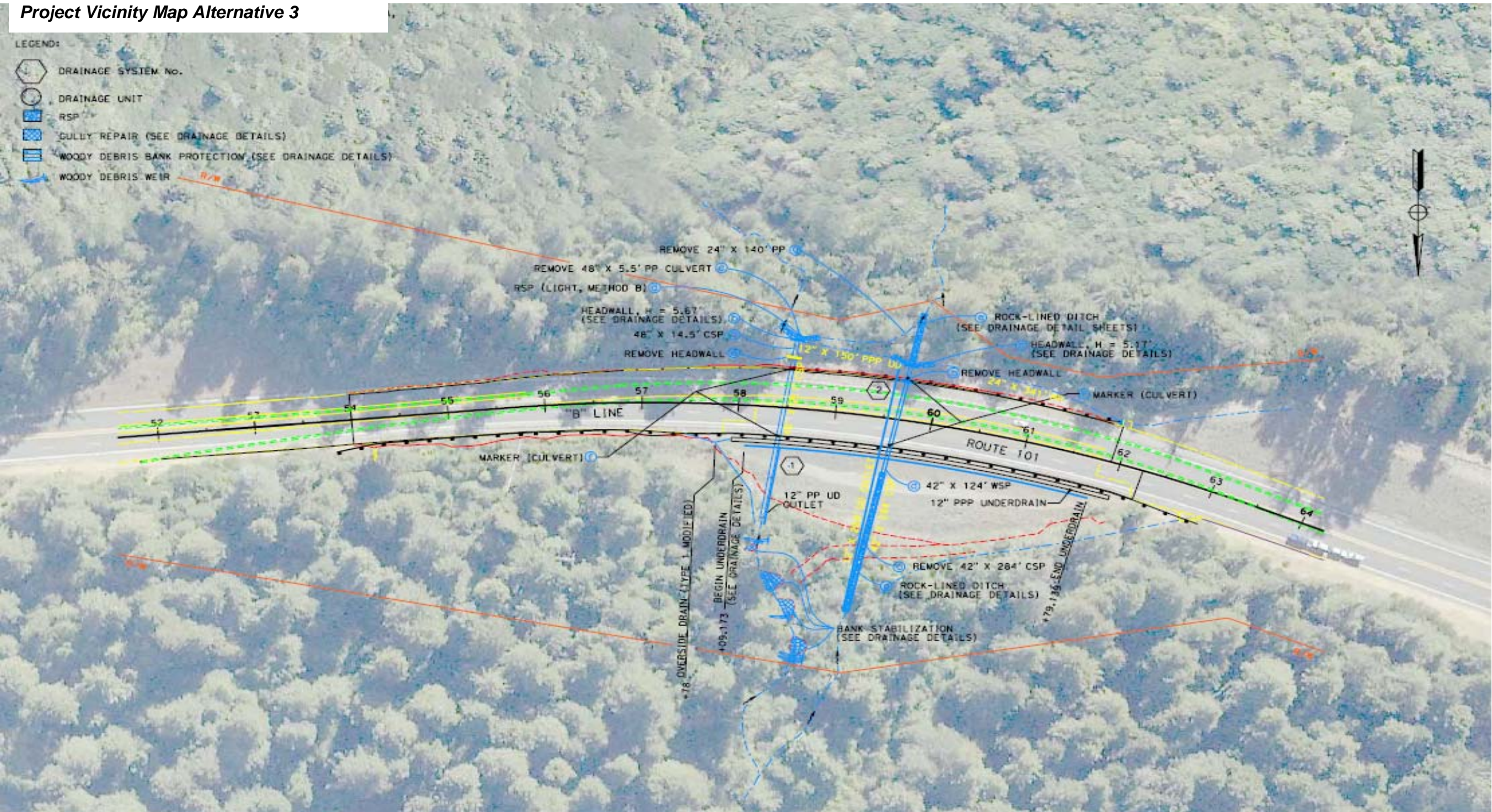
a'

Project Vicinity Map Alternative 1



environmental.dgn 9/11/2007 3:00:17 PM

Project Vicinity Map Alternative 3



Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- | | |
|-------------------------------------|------------------------------------|
| <input type="checkbox"/> | Aesthetics |
| <input type="checkbox"/> | Agricultural Resources |
| <input type="checkbox"/> | Air Quality |
| <input checked="" type="checkbox"/> | Biological Resources |
| <input type="checkbox"/> | Cultural Resources |
| <input type="checkbox"/> | Geology/Soils |
| <input type="checkbox"/> | Hazards and Hazardous Materials |
| <input checked="" type="checkbox"/> | Hydrology/Water Quality |
| <input type="checkbox"/> | Land Use/Planning |
| <input type="checkbox"/> | Mineral Resources |
| <input type="checkbox"/> | Noise |
| <input type="checkbox"/> | Population/Housing |
| <input type="checkbox"/> | Public Services |
| <input type="checkbox"/> | Recreation |
| <input type="checkbox"/> | Transportation/Traffic |
| <input type="checkbox"/> | Utilities/Service Systems |
| <input type="checkbox"/> | Mandatory Findings of Significance |

Impacts Checklist

The impacts checklist starting on the next page identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

A brief explanation of each California Environmental Quality Act checklist determination follows each checklist item. The checklist is followed by a focused discussion of Water Quality Impacts.

I. AESTHETICS — Would the project:

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

a) Have a substantial adverse effect on a scenic vista?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Roadway is being reconstructed to pre-slide condition and the hillside will be re-vegetated to avoid any impacts on the scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

No new light is proposed for this project. “No Impact” determinations in this section are based on the scope and location of the project.

II. AGRICULTURE RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

No farmlands will be affected by this project. Project borders State Park and timberlands.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on the scope and location of the project.

III. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Project does not conflict with any applicable air quality plan.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Expose sensitive receptors to substantial pollutant concentrations?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

e) Create objectionable odors affecting a substantial number of people?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on the scope and location of the project.

IV. BIOLOGICAL RESOURCES — Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

Section 7 Endangered Species Consultation with the U.S. Fish and Wildlife Service determined a may affect, but is not likely to adversely affect the Marbled Murrelet and the Northern Spotted Owl. There will be no effect on critical habitat designated for the Marbled Murrelet - December 2006.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

Temporary Impacts have been identified due to the required access to build the headwall (s) at the inlet at PM 41.5 and PM 41.52 and to construct the channel (s). See page 24 for discussion.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on the discussions with Project Biologist, August 2007.

V. CULTURAL RESOURCES — Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Disturb any human remains, including those interred outside of formal cemeteries?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on the Historic Resource Compliance Report, December 2006.

VI. GEOLOGY AND SOILS — Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

ii) Strong seismic ground shaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

iii) Seismic-related ground failure, including liquefaction?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

iv) Landslides?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Result in substantial soil erosion or the loss of topsoil?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on conversations with the Geotechnical Engineer (August 2007) and on the scope and location of the project.

VII. HAZARDS AND HAZARDOUS MATERIALS —

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

d) Be located on a site that is included on a list of

Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on review of the Initial Site Assessment dated September 2006.

e) For a project located within an airport land use plan or, here such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on the scope and location of the project.

VIII. HYDROLOGY AND WATER QUALITY

— Would the project:

a) Violate any water quality standards or waste discharge requirements?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

Discussion of impact starts on page 22 of the Initial Study. (Alternative 1)

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

Discussion of impact starts on page 22 of the Initial Study. (Alternative 1)

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?

No flooding is anticipated.

e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

Project will add less than .10 acre of impervious surface.

f) Otherwise substantially degrade water quality?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

j) Result in inundation by a seiche, tsunami, or mudflow?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on the location and scope (items b, d, and e) of the project.

IX. LAND USE AND PLANNING — Would the project:

a) Physically divide an established community?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

“No Impact” determinations in this section are based on the scope and location of the project.

X. MINERAL RESOURCES — Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

“No Impact” determinations in this section are based on the scope and location of the project.

XI. NOISE — Would the project result in:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

“No Impact” determinations in this section are based on the scope and location of the project.

XII. POPULATION AND HOUSING — Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------------	---	------------------------------------	--------------

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on the scope and location of the project.

XIII. PUBLIC SERVICES —

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Police protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Schools?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

There will be approximately two days of one-way traffic control. “No Impact” determinations in this section are based on the scope and location of the project and how precedence is given to emergency services vehicles during construction activities avoiding delays. (Alternative 1 and 3)

XIV. RECREATION —

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

“No Impact” determinations in this section are based on the scope and location of the project.

XV. TRANSPORTATION/TRAFFIC — Would the project:

a) Cause an increase in traffic that is substantial in

	Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

“No Impact” determinations in this section are based on conversations with Project Engineer, March 2007. Project will reconstruct roadway to the previous configuration of the highway. No expansion of the facility.

XVI. UTILITY AND SERVICE SYSTEMS — Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Potentially significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

the project from existing entitlements and resources, or are new or expanded entitlements needed?

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

g) Comply with federal, state, and local statutes and regulations related to solid waste?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

"No Impact" determinations in this section are based on scope and location of the project.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE —

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Affected Environment, Environmental Consequences, and Mitigation Measures

This section explains the effects that the proposed project would have on the human, physical and biological environments in the project area. It describes the existing environment that could be affected by the proposed project.

Alternative 1

Affected Environment

Work on the west side of the highway would entail a new headwall at the inlet of the drainage at PM 41.5 and minor grading for access and to remove fill along the inboard shoulder in order to establish the new diversion channel and to restore previously impacted wetland.

On the outlet side of highway 101, and below the existing right of way, the proposed project is adjacent to Humboldt Redwoods State Park. There are redwoods (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*) adjacent to the project area, which are considered suitable nesting and foraging habitat. Some smaller trees were removed during the emergency order project, however no trees larger than 12-inches diameter at breast height (DBH), are proposed for further removal.

The drainage at PM 41.5 flows through a 48-inch culvert under the highway and is a tributary to Chadd Creek. To the east of the project site is Humboldt Redwoods State Park. There are no hiking trails, utilities or residences that would be affected by this project. To the north of the project site is a stand of old-growth redwood/Douglas fir. This stand is owned by California State Parks and is designated as critical habitat for marbled murrelet. Suitable habitat for murrelets and owls will not be altered or removed.

Impacts

- ❑ Water velocities increase after the water from both culverts pass through the culvert at PM 41.5, and the slope increases as the water moves off of Caltrans right of way and onto State Park property. Increased amount of water due to merging of the two stream channels at the inlet (PM 41.5) by 45.4 *cfs* (cubic feet per second) at Q_{10} (10 year storm event), which was running at 68.8 *cfs* at Q_{10} .

The flows were merged late December 2005 during the emergency project. This is a 66% increase in the amount of water. With the proposed bioengineering (see mitigation section below) there will be a 17% increase in velocity for the 100-year storm event (the natural channel would have a 19% increase in velocity). **Deemed to have a significant impact to beneficial uses of water quality.**

- ❑ The following existing beneficial uses to water quality are lost along the length of approximately 135 ft of natural channel: Groundwater Recharge, Freshwater Replenishment, Cold Freshwater Habitat, Estuarine Habitat, Wildlife Habitat, and Migration of Aquatic Organisms. While not all of these existing uses would cause a significant impact to the water quality of the local basin, Caltrans proposes to mitigate for the identified losses. These uses come from the Water Quality Basin Plan for the Scotia Hydrologic Sub area 111.12 Main stem of the Eel River. **This loss was deemed to have a significant impact to the beneficial uses listed above.**
- ❑ In diverting the flow of water from the channel at PM 41.52, the existing natural channel at that location now receives water only during storm events and from the existing storm water under drain that discharges at this location.
- ❑ Access is proposed across a seasonal wetland in order to construct the diversion channel and headwall at PM 41.5. The quantity of this impact is 0.08 acres (3485 sq ft).
- ❑ Creation of a diversion channel at the inlet side of PM 41.52 will convert a small amount of wetland into new bed/bank/channel. The permanent fill of this wetland would be 0.01 acres (436 sq ft). The functions and values of this site would remain unchanged.

Avoidance, Minimization, and/or Mitigation Measures

Based on the above findings, the following avoidance, minimization and/or mitigation measures will be taken.

Storm Water/Water Quality

The following measures have been identified for this project:

1. Avoid impacts by using a clear water diversion when work is occurring in the channel at PM 41.5.

2. Habitat enhancement at PM 41.5 by the proposed bioengineering mitigation at the scour locations for the increased water velocity in the channel.
3. Weed-mat and clean wash gravel are proposed for placement over the seasonal wetland on the inlet side, to minimize temporary impacts, where access will be required. When construction is complete, these materials will be removed and disposed of properly.
4. Work on stream bank stabilization by using biodegradable fabric mesh and planting to a level of three feet above the channel flow line or height of weir (whichever is higher). Willow plantings and/or brush layering are proposed in order to stabilize the slopes above the biodegradable fabric, minimizing erosion and sedimentation due to the increased velocity in the channel.
5. Add woody debris at (4) scour locations along the channel at PM 41.5, to create pools during low flows to act as pooling basins, to trap sediment and to arrest the current channel incision. This proposed work is expected to contribute to long-term bank stability and channel flow line stability.
6. Hand labor is proposed for all work in the lower channel (on the outlet side of highway 101), except for the placement of rock by the existing access road approximately 30-feet below the culvert.
7. It is Caltrans policy to implement Best Management Practices (BMPs) on all projects in order to avoid impacts to storm water quality.

Alternative 2

It is anticipated that the No Build Alternative would have the same impacts as Alternative 1. Impacts associated with this alternative would include:

- Keeping the increased amount and velocity of water in the channel at PM 41.50.
- Loss of the beneficial use in the channel at PM 41.52.

Alternative 3

Affected Environment

Work is proposed at the inlet side of the road where the headwalls and channel restoration work would occur. It is proposed that the existing water diversion remain where it is until the culvert at 41.52 can be replaced and inlet and outlet channels

constructed. There is also a seasonal wetland along this side of the highway that was heavily disturbed during the 2005/2006 emergency project, which has begun to reestablish naturally.

One the outlet side of highway 101, and below the existing right of way, the proposed project is adjacent to Humboldt Redwoods State Park. There are redwoods (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*) adjacent to the project area, which are considered suitable nesting and foraging habitat. Some smaller trees were removed during the emergency order project, however no trees larger than 12-inches diameter at breast height (DBH), are proposed for further removal.

The streams that flow under the highway are tributaries to Chadd Creek. To the east of the project site is Humboldt Redwoods State Park. There are no hiking trails, utilities or residences that would be affected by this project. To the north of the project site is a stand of old-growth redwood/Douglas fir. This stand is owned by California State Parks and is designated as critical habitat for marbled murrelet. Suitable habitat for murrelets and owls will not be altered or removed.

Impacts

- ❑ Separating the water flows to the two culverts will reduce that amount and velocity of the water going into the culvert at 41.5. See appendix A for flow data of the culverts.
- ❑ Temporary beneficial losses to the channel at 41.52 from 2005/2006 to approximately fall 2008.

Temporary impacts to seasonal wetlands are necessary in order for construction to access the headwall at PM 41.5, and for the removal of the diversion channel.

The quantity of this impact is 0.08 acres (3485 sq ft).

Avoidance, Minimization, and/or Mitigation Measures

Based on the above findings, the following avoidance, minimization and/or mitigation measures will be taken.

Storm Water/Water Quality

The following measures have been identified for this project:

1. Avoid impacts by using a clear water diversion when work is occurring in the channel at PM 41.5.
2. Weed-mat and clean wash gravel are proposed during construction to minimize temporary impacts where access is required over the seasonal wetland. When construction is complete, these materials will be removed and disposed of appropriately.
3. Work on stream bank stabilization by using biodegradable fabric mesh and planting to a level of three feet above the channel flow line or height of weir (whichever is higher). Willow plantings and/or brush layering are proposed in order to stabilize the slopes above the biodegradable fabric mesh and to minimize erosion and sedimentation.
4. Add woody debris at (4) scour locations along the channel at PM 41.5, to create pools during low flows to act as pooling basins, to trap sediment and to arrest the current channel incision. This proposed work is expected to contribute to long-term bank stability and channel flow line stability.
5. Hand labor is proposed for all work in the lower channel (east of the roadway) except for the placement of rock by the existing access road approximately 30-feet below the culvert.
6. It is Caltrans policy to require implementation of Best Management Practices (BMPs) on all projects in order to avoid impacts to storm water quality.
7. Day-lighting approximately 170 ft of waters of the U.S., by removing the existing culvert and down drain and establishing a new channel that connects up with the currently abandoned channel at PM 41.52.

Right of Way

A Temporary Construction Easement was obtained for 0.1 acres on the east side of the highway to work on the stream channel at PM 41.52.

Comments and Coordination

Caltrans has received initial comments from California State Parks in regards to the amount and velocity of water flowing onto their property. As part of this project and in preparation, Caltrans has attempted to address the concerns with designing the

construction of the pooling opportunities to reduce the velocity of the flow as much as possible (on Caltrans right of way). Alternative 3 does address those concerns.

Caltrans received two letters with comments concerning this project. (See pages 29-32 for actual letters):

1. Letter from the Native American Heritage Commission - A Historic Property Survey Report (HPSR) for this project was prepared in December 2006 and is on file at District 1. This includes actions taken by Caltrans to assess project-related impacts on archaeological resources. The HPSR found that no properties requiring evaluation are present within the project's area of potential effects. Agencies and Tribes consulted included: Native American Heritage Commission, Blue Lake Rancheria, Table Bluff Wiyot Tribe, Bear River Band of Rohnerville Rancheria, and the Eel River Nation of Sovereign Wailaki.

2. Letter from the North Coast Water Quality Control Board (NCWQCB) - Alternative 3 has been added to address the comments made by the NCWQCB. A meeting was held on December 5, 2007 with the NCWQCB to discuss its comments, and the final Alternative 3 with associated mitigation was added to the alternatives to address these concerns.

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 384
SACRAMENTO, CA 95814
(916) 653-4062
(916) 657-5390 - Fax

Arnold Schwarzenegger, Governor



September 24, 2007

Stephanie Coleman
Department of Transportation (Caltrans)
P.O. Box 3700
Eureka, CA 95502-3700

RE: SCH#2607092063 Redcrest Storm Damage Restoration Project; Humboldt County.

Dear Ms. Coleman:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) regarding the above project. To adequately assess and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

- Contact the appropriate Information Center for a record search to determine:
 - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
 - If any known cultural resources have already been recorded on or adjacent to the APE.
 - If the probability is low, moderate, or high that cultural resources are located in the APE.
 - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
 - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
 - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the NAHC for a Sacred Lands File Check.
 - **Check Completed with negative results, 09/19/07**
The absence of specific site information in the Sacred Lands File does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites (see below).
- ✓ Contact the NAHC for a list of appropriate Native American Contacts for consultation concerning the project site and to assist in the mitigation measures.
 - **Native American Contacts List attached**
The NAHC makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received. If you receive notification of change of addresses and phone numbers from any those individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information.
- ✓ Lack of surface evidence of archaeological resources does not preclude their subsurface existence.
 - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archaeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge of cultural resources, should monitor all ground-disturbing activities.

- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
- Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7850.5, CEQA §15064.5 (e), and Public Resources Code §5097.38 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst
(916) 653-4040

CC: State Clearinghouse



**California Regional Water Quality Control Board
North Coast Region
John W. Corbett, Chairman**

www.waterboards.ca.gov/northcoast
5550 Skyline Boulevard, Suite A, Santa Rosa, California 95403
Phone: (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135



**Arnold
Schwarzenegger
Governor**

October 18, 2007

Ms. Stephanie Coleman, Acting Senior Environmental Planner
North Region Environmental Planning
California Department of Transportation
P.O. Box 3700
Eureka, CA 95502

Dear Ms. Coleman:

Subject: Comments on the Focussec Initial Study and Proposed Mitigated Negative Declaration (SCH# 2007062063) for Reconstruction of Roadway near Redcrest (01-Hum-101-PM 40.9/42.2)

File: Water Quality Certification – General Correspondence

Thank you for the opportunity to comment on the Department of Transportation's *Focused Initial Study with Proposed Mitigated Negative Declaration* for the Reconstruction of Highway 101 near Redcrest (01-Hum-101-PM 40.9/42.2). The proposed project (Alternative 1) involves reconstruction of the four lane highway, construction of a tieback retaining wall, removal of an existing separated culvert, construction of a surface water diversion channel, installation of a culvert headwall at PM 41.5, and streambank stabilization work in the channel located at PM 41.5. The purpose of the project is to restore the two traffic lanes that were lost during 2005/2006 winter storms. Based upon our review, we have the following comments

General Comments

The State Water Board and the Regional Water Quality Control Boards (Water Boards) regulate discharges and threatened discharges to protect the quality of waters of the State, broadly defined as "the chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use."¹ Watersheds are complex natural systems in which physical, chemical, and biological components interact to create the beneficial uses of water. The proposed project would alter the physical, chemical, and biological components of the watershed by increasing flows in one existing channel and eliminating natural flows to another existing channel.

¹ California Water Code, §13050.

California Environmental Protection Agency

Recycled Paper

Mrs. Stephanie Coleman

-2-

October 18, 2007

There is substantial evidence that increasing peak flows in a natural waterway causes increased bank erosion and significant adverse impacts to the downstream beneficial uses of water. There is also substantial evidence that eliminating or significantly reducing the amount of water that would otherwise naturally flow through a waterway will adversely affect groundwater, nearby wetlands, aquatic life, and other beneficial uses of water.

In order for the Regional Water Board to certify a project under section 401 of the Clean Water Act, all aspects of the project must comply with all water quality standards. The proposed hydrologic modifications would result in degradation of the beneficial uses of water by eliminating or reducing flows in one channel and increasing flows in another channel. The emergency repairs that were already completed also resulted in a loss of beneficial uses associated with filling wetlands adjacent to the highway. The Regional Water Board is mandated to prevent such degradation of beneficial uses of water. Regional Water Board staff believe that the proposed project will not comply with water quality standards and that the proposed mitigation measures will not be sufficient to ensure that the project complies with water quality standards.

Impacts associated with increasing flows in a natural channel will extend downstream throughout the watershed. Impacts from the proposed project would not be limited to the area within Caltrans' right-of-way and any areas directly affected by the discharges of dredge and fill materials. The impacts associated with increasing flow volume and velocity would, at a minimum, extend downstream to the point where the two channels naturally merge. At this time, Caltrans has only proposed to install measures to address this impact within the portion of the affected channel extending to the downstream edge of the right-of-way.

Further, the Regional Water Board requires mitigation for project impacts associated with increasing the amount of runoff entering surface waters. This typically affects Caltrans' projects that involve installation of new and additional impervious surfaces. The proposed project would result in similar impacts. While it would be necessary to strengthen the channel banks to accommodate increased flows and minimize adverse impacts to water quality associated with those increases, the measures installed for strengthening would in fact result in loss of habitat and be considered an impact of the project, rather than a compensatory mitigation. Mitigation for increasing runoff from new impervious surfaces is typically achieved by providing detention/retention facilities capable of preventing an increase in peak flows during the 100-year storm event. Acceptable mitigation for adverse impacts caused by increasing peak flows in a channel would involve reducing unnatural peak flows caused by anthropogenic sources of runoff that are known to be causing downstream bank erosion and downstream sedimentation.

The Eel River watershed is identified on the State of California Clean Water Act Section 303(d) list as impaired for sediment and temperature. Total Maximum Daily Load (TMDL) analyses have been completed for the Eel River watershed sediment and temperature listings. At present, there are no watershed-specific implementation plans for this TMDL. However, it appears that the proposed project is likely to result in

California Environmental Protection Agency

Recycled Paper

increased bank erosion during high flows and would not comply with the State Water Board Policy with Respect to Maintaining High Quality Waters in California (Resolution No. 68-6) due to the potential for increased erosion and sedimentation in this sediment impaired watershed.

Specific Comments

1. The proposed negative declaration describes three alternatives including the proposed alternative (Alternative 1), the "No-Build" alternative (Alternative 2), and "Other Alternatives Considered But Rejected by the Project Development Team." It is not clear why restoration of the existing structure, including the two existing culverts under the highway, was not considered. Rebuilding the highway and drainage conveyances appears to be a viable alternative that would avoid the direct impacts to surface waters that would result from implementation of Alternative 1. It appears the project purpose could be achieved and significant impacts could be avoided without routing flows from one channel into another channel. An alternative that involves repairing, upgrading, and/or replacing the culverts that existed prior to the storm damage, and returning natural flows to both stream channels should be considered.
2. The discussion under "Other Alternatives Considered But Rejected by the Project Development Team" describes two alternatives that were considered that could achieve the project's purpose. It is not clear if either of these alternatives would also avoid the anticipated adverse impacts to water quality associated with implementation of Alternative 1. It appears that implementation of a project that would generally restore the highway and the drainage conveyances to the condition that existed prior to the storm damage would avoid significant adverse impacts to water quality and the need to provide substantial mitigation for those impacts.
3. The Initial Study recognizes that combining flows is likely to result in erosion impacts to the channel that would receive the combined flows. The CDOT Project Development Team deemed this impact to have a less than significant impact with mitigation. Proposed mitigation for this impact is bank stabilization at four specific locations along the channel. The furthest downstream proposed bank stabilization site would be located near the Caltrans right-of-way. As mentioned in the general comments above, impacts to the channel from increased peak flows would not end at the Caltrans right-of-way.
4. The proposed bank stabilization activities may reduce the potential for future bank erosion and sedimentation of the channel that would result from the increased flow volume and velocity caused by combining the flows. Reducing the potential for bank erosion and sedimentation is not habitat enhancement. It may not be possible to adequately mitigate for the anticipated impacts associated with combining stream flows and increasing the volume and velocity of water moving through the existing channel.

California Environmental Protection Agency

Recycled Paper

5. The proposed project would result in a sixty-six percent increase in the volume of water in the channel at PM 41.5 during a 10-year storm event. Regional Water Board staff believe that a sixty-six percent increase in flows during a 10-year storm event is a significant increase in flow that will have significant impacts on the channel. Anticipated impacts would be more significant during the 100-year storm event; however, the percent increase in flows during a 100-year storm event is not provided.
6. A nineteen percent increase in flow velocity during a 100-year storm event is a significant increase. Implementation of the proposed bank stabilization activities would apparently reduce the velocity increase to a seventeen percent increase during the 100-year storm event. A seventeen percent increase in flow velocity during a 100-year storm event is still a significant increase.
7. The proposed bank stabilization activities are not adequate to prevent adverse impacts to the channel from the increase in flow volume and velocity. The proposed bank stabilization activities include use of geogrid, an unnatural material that should not be used along this stream. Geogrid is more appropriate for use in constructed waterways and channels created to treat and convey storm water runoff from new urban development.
8. Regional Water Board staff does not agree that proposed bank stabilization activities will result in habitat enhancement. The proposed bank stabilization activities would be considered additional project impacts that are only necessary because the proposed project would increase the volume and velocity of water in the channel during peak flows.
9. Enhancement of the Chadd Creek riparian area is proposed as mitigation for the loss of beneficial uses in the channel at PM 41.52. The amount of mitigation would be "worked out with the resource agencies." Please be advised that enhancement of the Chadd Creek riparian area by planting vegetation is not acceptable compensatory mitigation for the complete loss of beneficial uses of the channel at PM 41.52. As stated in our general comments, watersheds are complex natural systems in which physical, chemical, and biologic components interact to create the beneficial uses of water. Appropriate mitigation for this impact would create or restore the physical, chemical, and biological components of the affected channel by creating additional habitat that is similar to the lost habitat and that replaces lost beneficial uses. Providing acceptable mitigation for diverting water out of several hundred feet of a stream channel is a significant challenge that may not be practical or possible.
10. The emergency repairs that have already been completed resulted in the filling and rocking of existing wetlands that were located between the two drainage channels on the uphill side of the highway. The initial study indicates that creation of a diversion channel at the inlet side of the PM 41.52 will convert a

California Environmental Protection Agency

Recycled Paper

negligible amount (0.01 acre) of wetlands into "waters of the U.S." Please be advised that wetlands are typically "waters of the U.S." Compensatory mitigation must be provided for any amount of wetlands that would be impacted by the past and future project in order to comply with the State and Federal no net loss policies. Mitigation for this wetland impact is not adequately addressed in the initial study.

11. This office requires Caltrans to evaluate feasibility of mitigating for impacts to water quality associated with increasing the amount of runoff from installation of new impervious surfaces. The proposed project would result in similar impacts to the section of stream channel that would convey the combined flows. Creating a bigger conveyance channel and/or strengthening the banks of an existing natural channel are not appropriate mitigation measures for this type of impact. If the purpose of the project cannot be achieved without combining flows upstream of the highway, the anticipated adverse impacts would occur along the entire length of channel from the culvert outlet near the highway to the natural confluence of the two channels located downstream of the Caltrans right-of-way. Mitigation for adverse impacts to that downstream section of stream channel would also be necessary.

As indicated in the above comments, the proposed mitigated negative declaration does not demonstrate that this project avoids adverse impacts, minimizes adverse impacts, and adequately mitigates for anticipated and unavoidable adverse impacts. Regional Water Board staff believe there is substantial evidence that diverting flows into a channel and eliminating flows from the diverted channel would have a significant adverse effect on the beneficial uses of the existing channels. The project also permanently impacts existing wetlands for which there is not adequate compensatory mitigation. A more thorough alternatives analysis and adequate mitigation for all direct and indirect impacts to water quality and beneficial uses is required in order for this project to obtain water quality certification.

Again, thank you for this chance to comment. If we may clarify any of our comments or be of further assistance, please contact me at (707) 576-2801.

Sincerely,



Dean Pratt, P.G.
Engineering Geologist

101807_DUP_0101redcrest_CEQAcmt.doc

cc: Governor's Office of Planning and Research, State Clearinghouse, P.O. Box
3044, Sacramento, CA 95812-3044

California Environmental Protection Agency

Recycled Paper

List of Preparers

The following Caltrans North Region and District 1 staff contributed to the preparation of this Initial Study:

Alex Arevalo, Transportation Engineer. Contribution: NPDES Storm Water Coordinator

Stephanie Coleman, Associate Environmental Planner. Contribution: Environmental Study Coordinator and Document Writer

Timothy Keefe, Associate Environmental Planner (Archaeology). Contribution: Historic Property Survey Report (HPSR)

Lucy Kostrzewa, Senior Hydraulics Engineer. Contribution: Hydraulic Recommendation

David Melendrez, Senior Transportation Engineer. Contribution: NPDES Storm Water Coordinator

Richard Mullen, Senior Transportation Engineer. Contribution: Project Manager

Coady Reynolds, Associate Environmental Planner (Natural Science). Contribution: Project Biologist, Biological Assessment

Talitha Stimson, Transportation Engineer. Contribution: Project Engineer

Appendix A

	both culverts			41.5 alone			41.52 alone		
	<i>cfs</i>	<i>ft/sec</i>	<i>n</i>	<i>cfs</i>	<i>ft/sec</i>	<i>n</i>	<i>cfs</i>	<i>ft/sec</i>	<i>n</i>
Q₁₀	114.2			68.8			45.4		
V, Upstream					10.7	0.06		10.41	0.06
V, Culvert		22.95	0.024		6.81	0.024		5.17	0.024
V, d/s nat channel		9.61	0.075		8.35	0.075		8.18	0.075
V, d/s rsp		12.4	0.05		10.62	0.05		7.81	0.05
V, d/s bioengineered		10.9	0.06		9.31	0.06		n/a	
	both culverts			41.5 alone			41.52 alone		
	<i>cfs</i>	<i>ft/sec</i>	<i>n</i>	<i>cfs</i>	<i>ft/sec</i>	<i>n</i>	<i>cfs</i>	<i>ft/sec</i>	<i>n</i>
Q₁₀₀	173.03			92.9			80.13		
V, Upstream					11.63	0.06		12.19	0.06
V, Culvert		25.51	0.024		9.19	0.024		9.13	0.024
V, d/s nat channel		10.62	0.075		10.4	0.075		9.81	0.075
V, d/s rsp		14.56	0.05		12.12	0.05		9.35	0.05
V, d/s bioengineered		12.18	0.06		10.41	0.06		n/a	